

Chehalis River Basin Flood Authority

*Reducing Flood Damage and
Restoring Aquatic Species*

**Grays Harbor County Citizen Corps
January 10, 2024**

Scott Boettcher

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Today's Presentation

- Describe the “Flood Authority”
 - #1 -- Local Projects
 - #2 -- Flood Warning System
- Touch on “Chehalis Basin Strategy”
- Allow time for discussion.



Office of
Chehalis Basin

Chehalis Basin
Board

<https://chehalisbasinstrategy.com/>

Chehalis River Basin Flood Authority

- **Formed** in 2008
- **Focused on** flood hazard mitigation
- **Decision-making**
 - informed by science
 - protective of Basin residents/communities
 - environmentally appropriate
- **Jurisdictions** represented (see [inter-local agreement](#))
 - Grays Harbor County (2008)
 - City of Aberdeen (2008)
 - City of Cosmopolis (2011)
 - City of Hoquiam (2017)
 - City of Montesano (2008)
 - City of Oakville (2008)
 - Lewis County (2008)
 - City of Centralia (2008)
 - City of Chehalis (2008)
 - City of Napavine (2011)
 - Town of Pe Ell (2008)
 - Thurston County (2008)
 - Town of Bucoda (2008)



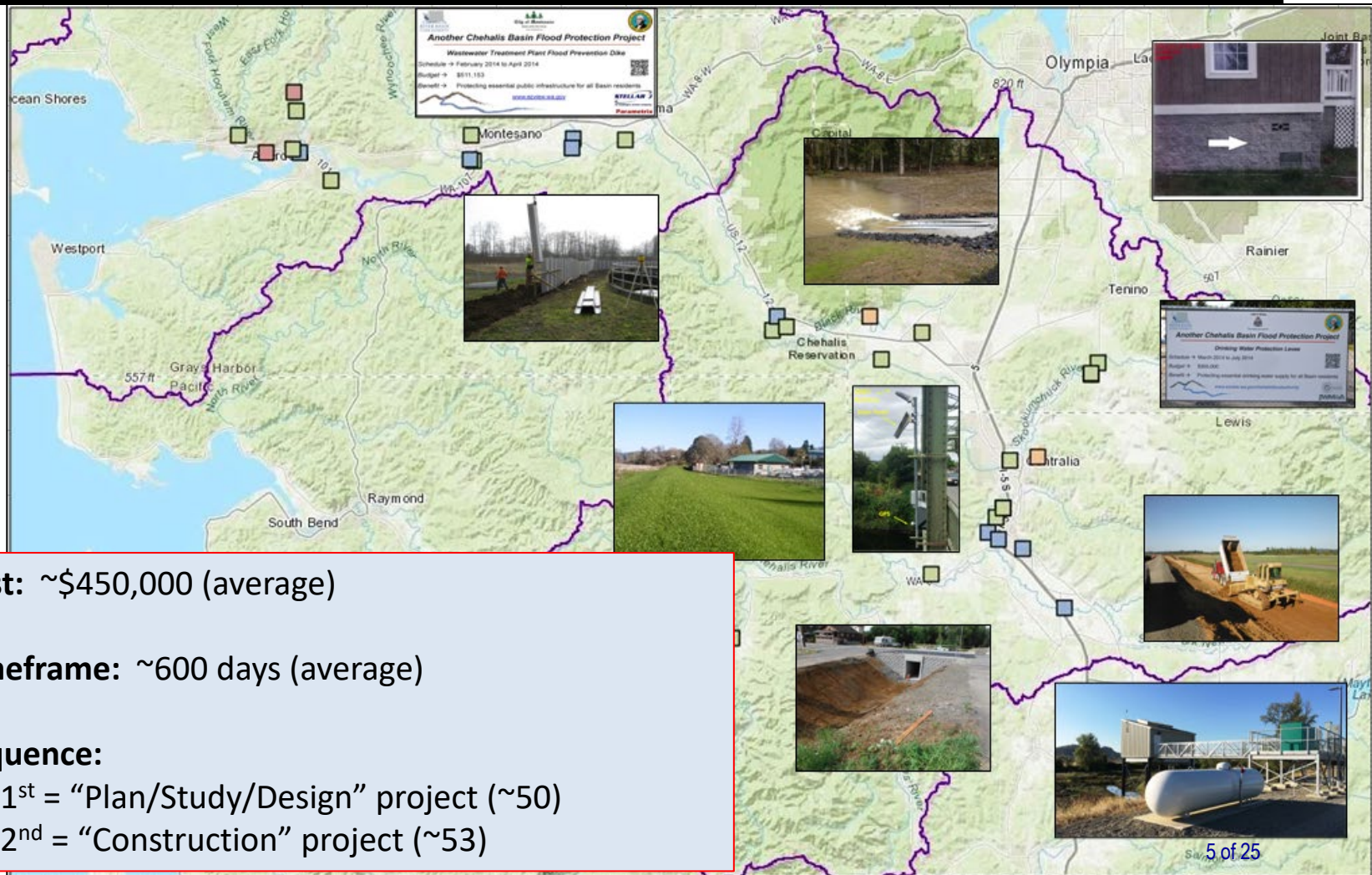
***Help local communities identify, develop, implement
local flood hazard reduction solutions.***

Local Projects (#1)

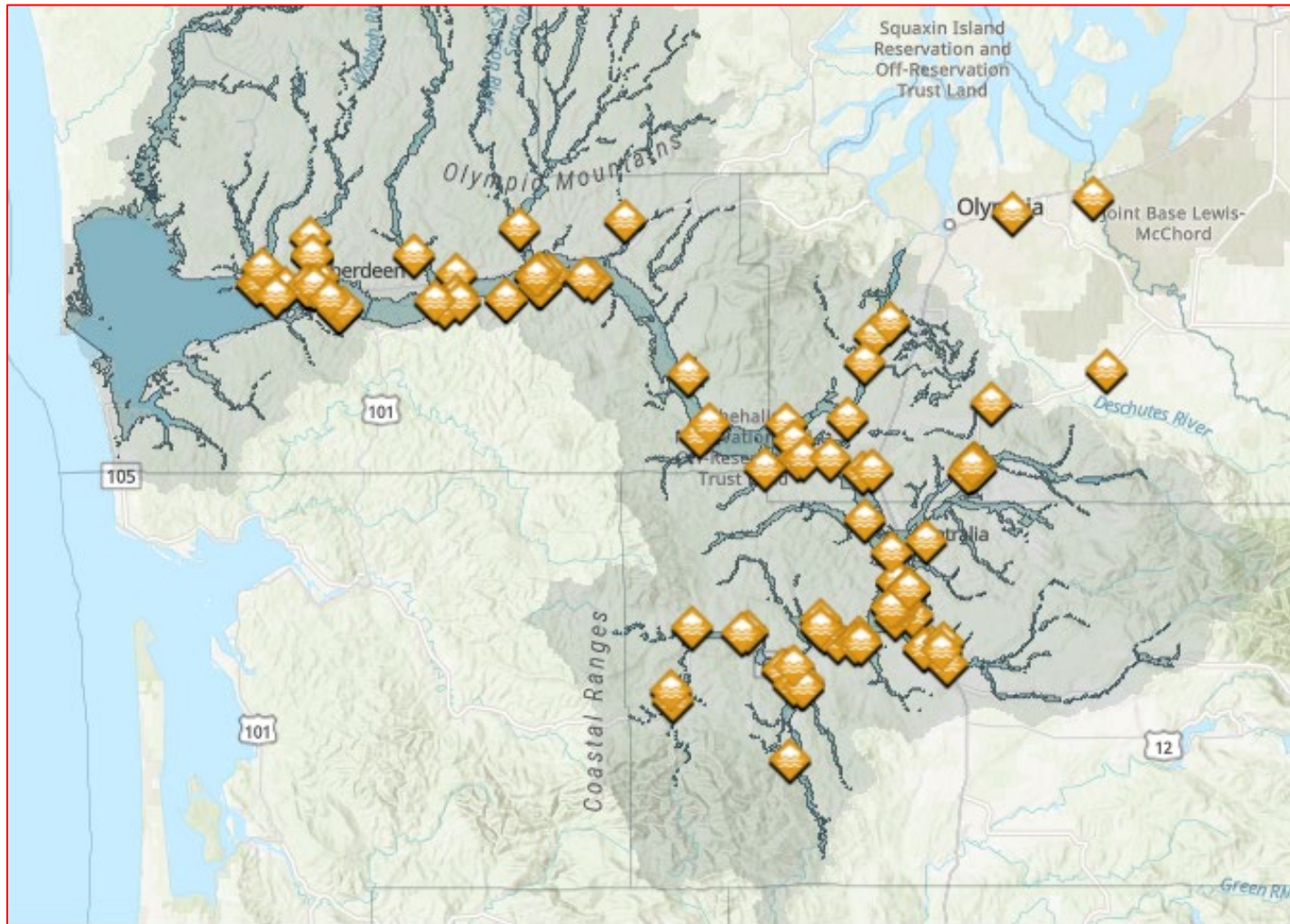
1. Reduce flood damage.
2. Protect people, property, infrastructure.
3. Improve readiness, response, resiliency.
 - *Drinking Water* (Boistfort, Bucoda).
 - *Wastewater* (Montesano, Pe Ell).
 - *Emergency Response* (Grays Harbor County, Chehalis-Centralia Airport).
 - *Regional Economic Infrastructure* (Montesano, Port of Chehalis, Port of Grays Harbor).
 - *Community Protection* (Aberdeen, Adna, Bucoda, Centralia, Chehalis, Chehalis Tribe, Hoquiam, Oakville).
 - *Flood Warning* (Basin-wide).

State Capital Budget:
2012-13 -- \$ 5.0M
2013-15 -- \$10.7M
2015-17 -- \$15.7M
2017-19 -- \$ 9.6M
2019-21 -- \$ 6.3M
2021-23 -- \$ 4.1M
2023-25 -- <u>\$ 3.6M</u>
\$55.0M

Local Projects (103 Projects Completed 2012-23)



Local Projects (103 Projects Completed 2012-23)



COMPLETED FLOOD AND FISH – Mill Creek Dam

Local Projects (Cosmopolis)

Mill Creek Multi-Objective Implementation Plan:

- ✓ Part I = Reconstruct Mill Creek Dam (done).
- ✓ Phase II project = Address 4,500' of Mill Creek flow, culverts, and flood water evacuation (under development).

CHEHALIS RIVER BASIN FLOOD AUTHORITY **CITY OF COSMOPOLIS**

Another Chehalis Basin Flood Protection Project

Mill Creek Dam Improvement Project

Schedule → October 2015 to July 2017
Budget → \$3,082,000
Benefit → Protecting and restoring essential Community flood control assets

www.ezview.wa.gov/chehalisfloodauthority



City of Cosmopolis, Sep 29, 2018

The Daily World AGAIN, Voted **BEST BANK** & BEST PLACE TO GET A LOAN. It's You that makes us better. Thanks!


News Sports Life Opinion Weather Obituaries Print Editions Contests Classifieds All Sections

NEWS

New Mill Creek Dam ribbon cutting Saturday in Cosmopolis

September 28, 2018 7:00 pm

f t r e p

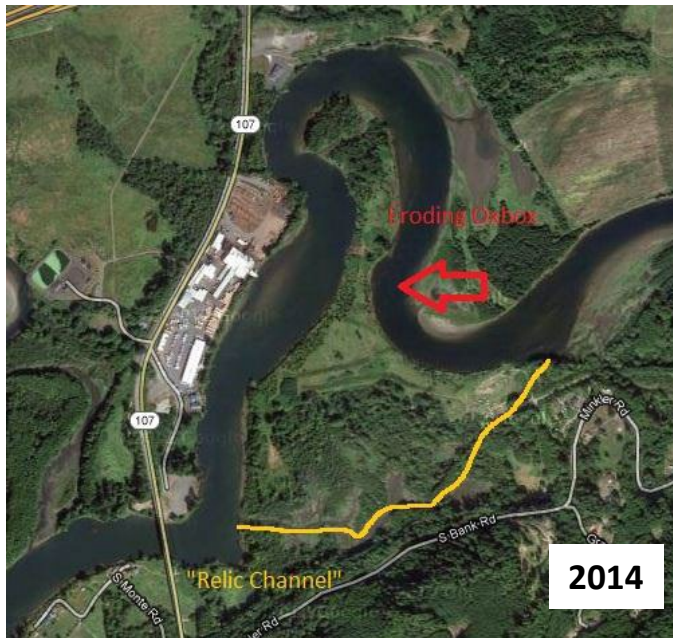


FILE PHOTO Cosmopolis Mayor Frank Chestnut (left) will officiate a ribbon cutting ceremony for the new Mill Creek Dam Saturday at noon.

<https://www.thedailyworld.com/news/new-mill-creek-dam-ribbon-cutting-saturday-in-cosmopolis/>

COMPLETED FLOOD – Mary's River Lumber and Montesano WWTP Chehalis River Protection Projects (2012-15)

Local Projects (Montesano)

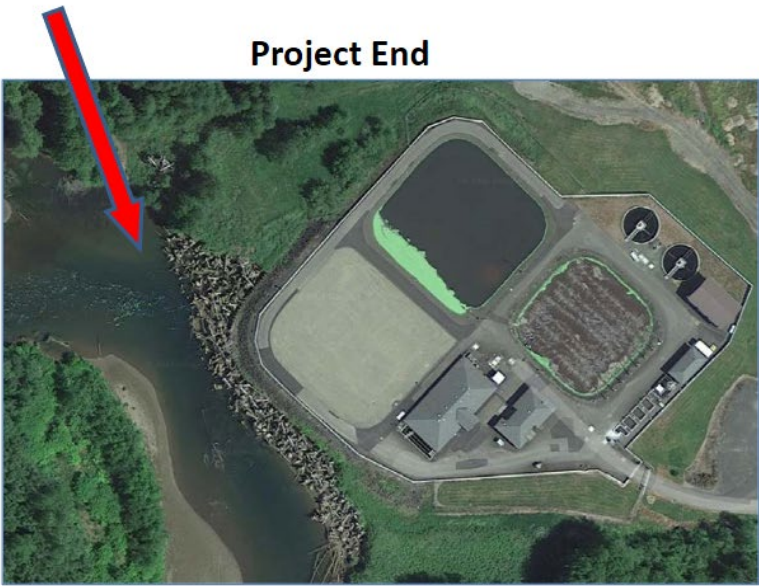


- ✓ ~\$6M protection against Chehalis River
- ✓ Funding pooled/shared.

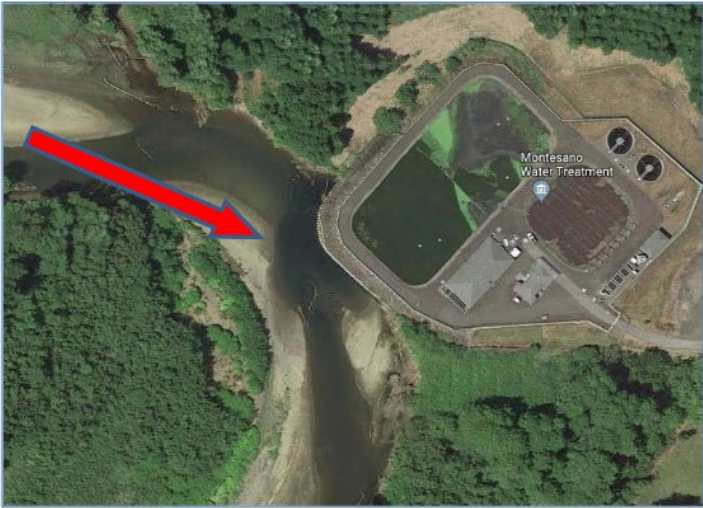
COMPLETED FLOOD AND FISH –
Montesano WWTP Protection
Project (2017-2020)

Local Projects (Montesano)

- ✓ Protect WWTP from on-coming Wynoochee river using 220+ “log-jacks.”
- ✓ \$2 million (for “log-jacks”).
- ✓ Small cost compared to WWTP relocation and environmental cleanup (in event of WWTP breaching).



<https://www.google.com/maps/@46.9678637,-123.6077821,197m/data=!3m1!1e3>



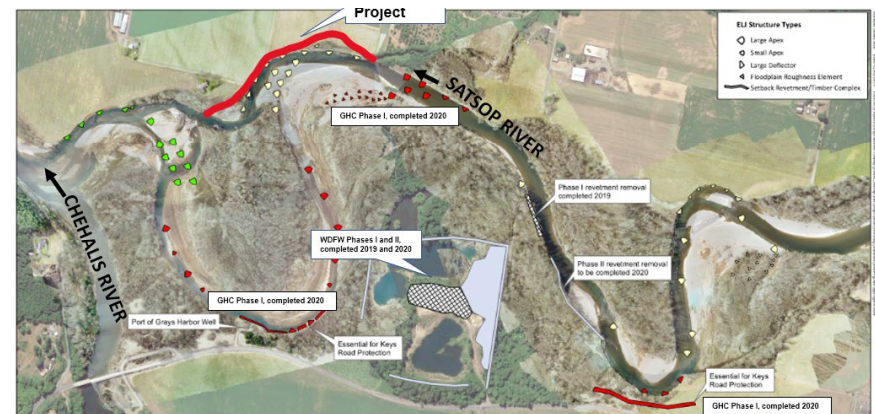
Project Start



Governor Inslee and Mayor Samuel stand overlooking the Wynoochee River.

July 7, 2022 →

Local Projects (Grays Harbor County, Grays Harbor Conservation District, WDFW)



COMPLETED FLOOD AND FISH –

- 2022 Right Bank Conservation Project (Phase IB)
- 2020 Keys Road Infrastructure Protection (Phase IA)
- 2019-20 WDFW Ponds

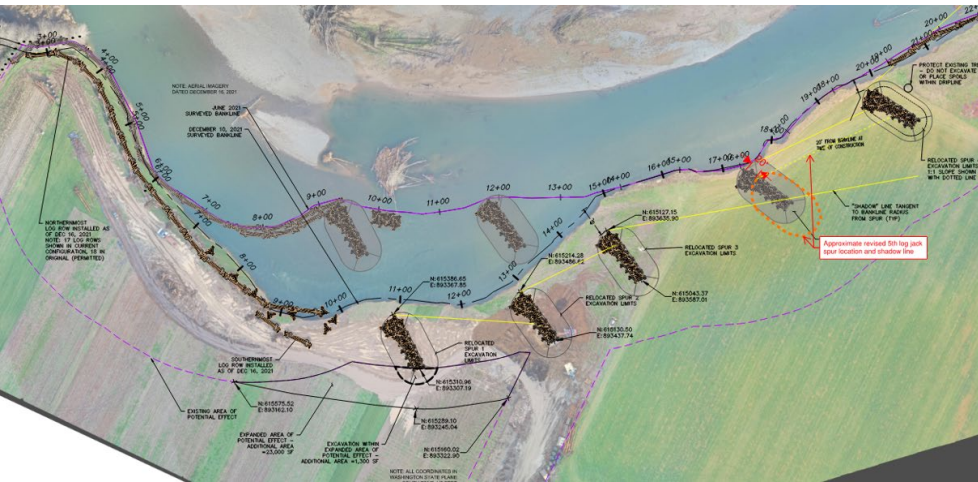
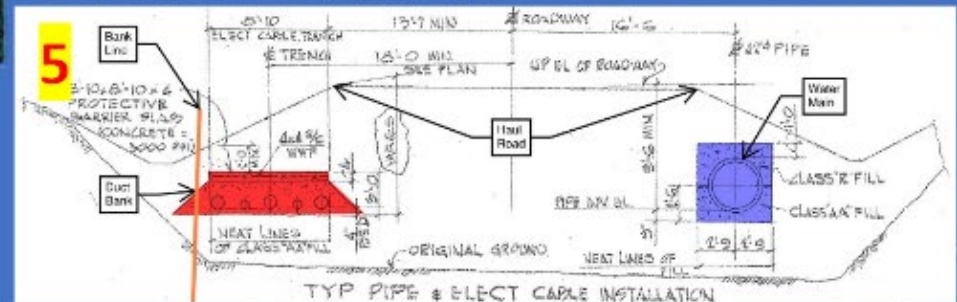


Image = 2019

COMPLETED FLOOD AND FISH – “Haul Road” Emergency Repair (2022-23)

Local Projects (Port of Grays Harbor)



← 9/14/2022

COMPLETED FLOOD AND FISH –
Cloquallam Creek Erosion Pilot (36 Lower
Falls Creek Rd)

Local Projects (Grays Harbor Conservation District)

Land owner Help?

 Tuttle, Megan E (DFW)
To  Scott Boettcher;  Anthony Waldrop 9/15/2021
 You forwarded this message on 9/22/2021 1:41 PM.

Hi Scott and Anthony,

I hope this week finds you well. I wanted to reach out for a Landowner on the Cloquallum (36 Lower Falls Creek rd) that is experiencing highly erosive banks and is about 36 ft from their home and 15ft from their septic drain field. The pervious land

Request -- 9-15-2021

- ✓ Highly-collaborative emergency project to protect property and septic drain field
- ✓ Property and drain field saved, environmental contamination and clean-up avoided.

\$ 15,000 Landowner
\$ 75,000 OCB Erosion Program
\$112,500 Flood Authority
\$205,500 Total



Construction -- 11-23-2021



Post-Construction -- 12-01-2021

COMPLETED FLOOD – Chehalis-Centralia Airport

Local Projects (Chehalis)



- ✓ New Pump Cost = \$1.1M **January 2022**
- ✓ Widening Levee = \$1.2M
- ✓ ROI = Substantial:
 - Jobs: 1,658
 - Labor income: \$68 million
 - Value added: \$115.3 million
 - Business revenues: \$186.4 million
 - Annual tax revenues (local, state): ~\$9M
- ✓ 1/2022 High-water event = Airport stayed operational



New Pump -- 2017



Old Pump – 1940s



Widening/Repairing

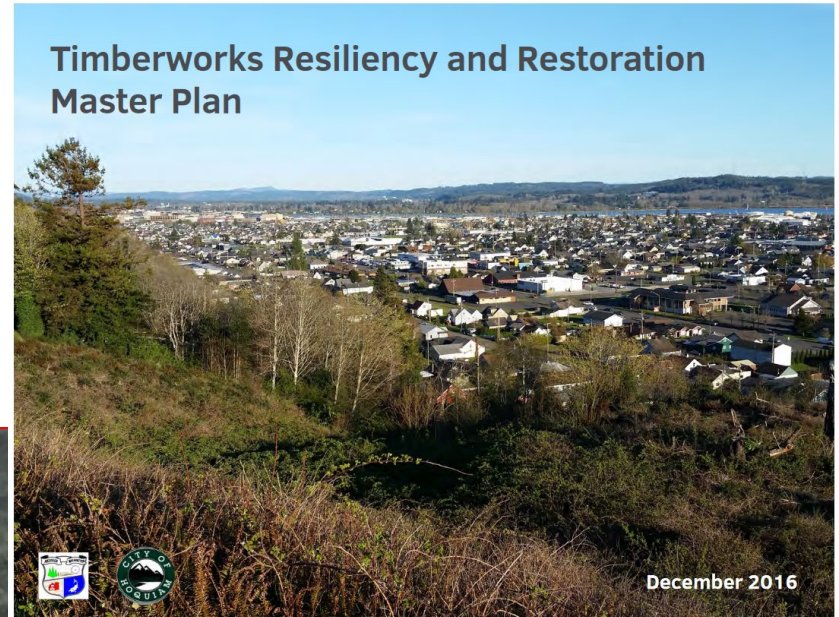
Levee – 2014 9-21-2022

UNDERWAY FLOOD – North Shore
Levee and West Segment

Local Projects (Aberdeen, Hoquiam)

COMPLETED 2016 – Timberworks
(precursor to currently underway North
Shore Levee for Aberdeen and
Hoquiam)

Timberworks Resiliency and Restoration
Master Plan



North Shore Levee—West Segment

CITY OF HOQUIAM

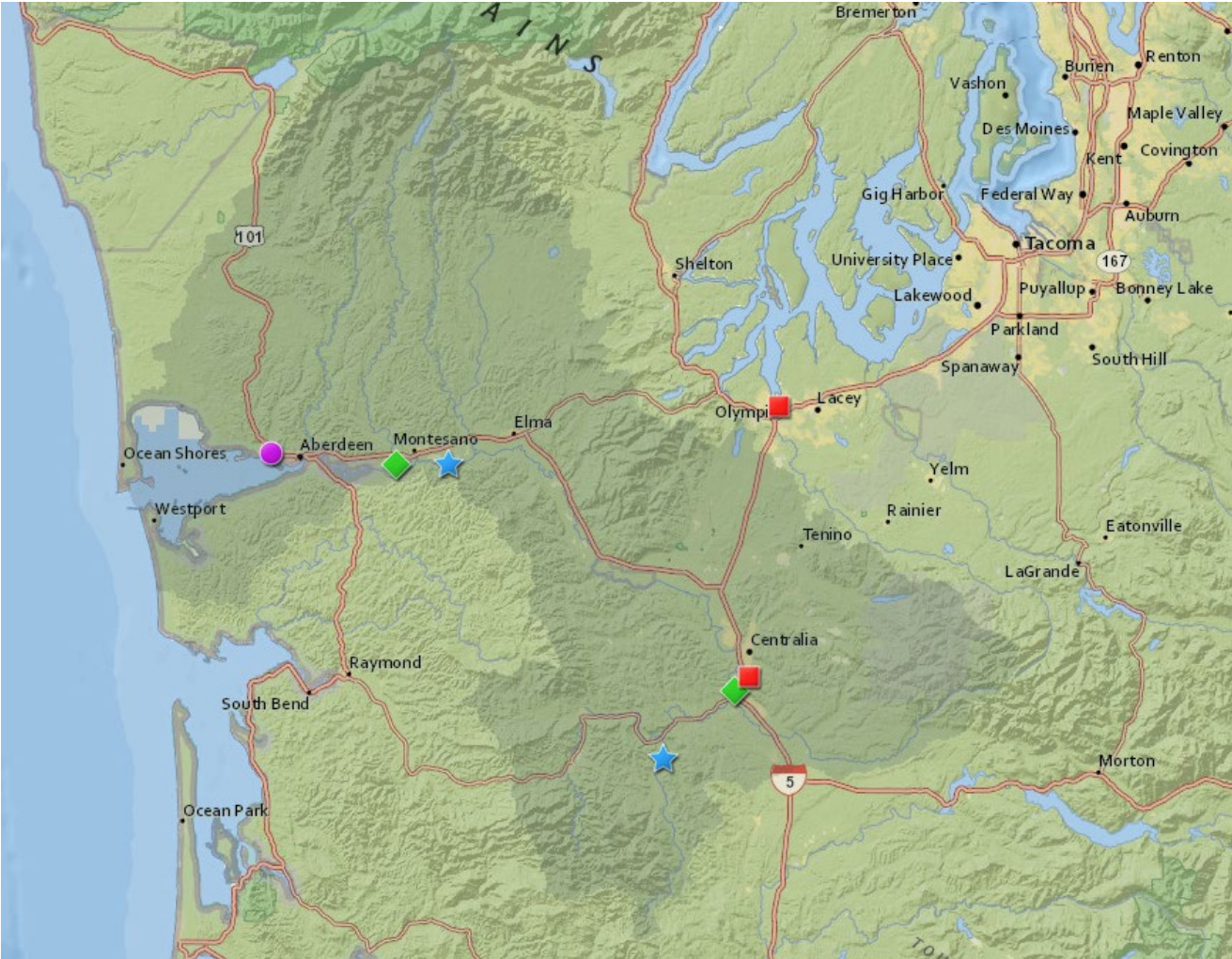
North Shore Levee




CITY OF HOQUIAM

CITY OF ABERDEEN

16 Projects, \$9,360,965

Local Projects (New and Continuing, 2023-25)



-  Administrative
-  Erosion
-  Infrastructure
-  Pump Station

View interactive map
<https://arcg.is/08jfjq>



Local Projects (New and Continuing, 2023-25)

Aberdeen	22-2301	Aberdeen Pump Stations
	22-1728	Design and Permitting of Farragut Pump Station
	23-1219	Fry Creek Phase 3 Design
Cosmopolis	22-2277	Joint Surface Water Management Comp Plan
	21-1451	Mill Creek Multi-Objective Implementation Plan, Ph II
GHCD	22-2546	Lower Satsop Right Bank Conservation, Phase 2
Hoquiam	21-1466	10th Street Pump Station Design and Permitting
	22-2278	Hoquiam Pump Stations
	21-1467	Queen Ave Pump Station Design and Permitting
Montesano	23-1482	Montesano Water Supply Resiliency
Port of Grays Harbor	22-2358	Haul Road Mid Term Project

Lewis County	-	New Skookumchuck Reservoir Gage
	23-1483	S.F. Chehalis /Boistfort CMZ
Chehalis	23-1221	Chehalis Flooding Strategy and Investment Plan
	23-1481	Derelict WWTP Demolition and Removal
Port of Chehalis	18-2614	Berwick Creek Flood Reduction and Restoration

Plan/Design	Construct
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Flood Warning System (#2)

- ✓ Developed with State Capital Budget \$.
- ✓ Maintained with local \$.

https://chehalis.onerain.com

The Chehalis River Basin Flood Warning System
Be Aware; Be Prepared; Flood Season is here!

Sign Up Now to receive 2023-24 email high water alerts - The Chehalis Basin Flood Warning System sends automatic email alerts about rising floodwaters.

To sign up for email alerts, click the icon below:

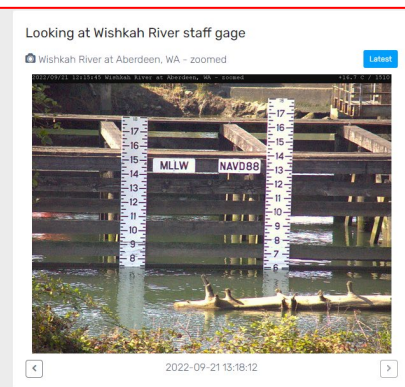
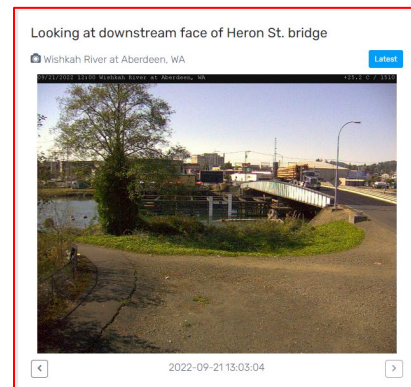
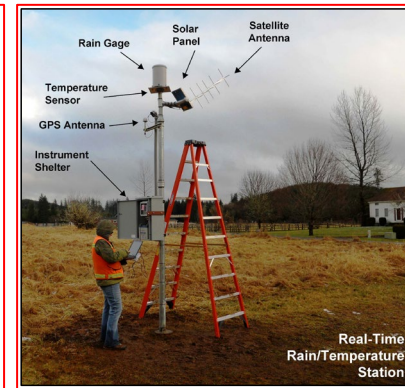
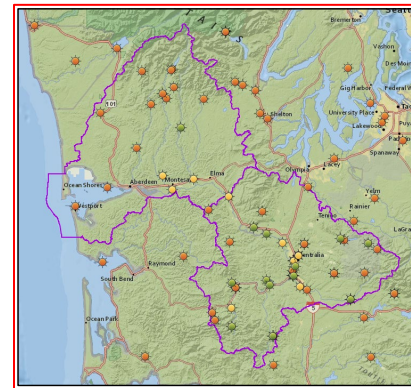
Questions?
Contact Cheryl Vincent at cvincent@westconsultants.com and Jennifer McAdoo at jennifer.mcadoo@icf.com.

Para leer esta información en español, haga clic aquí

Click here or the image above to visit our Interactive ArcGIS Dashboard!

Chehalis River Basin Forecasting Tools

- Chehalis River (and tributaries) Dashboard
- Weather Forecast
- Rainfall Forecast
- Radar Rainfall
- River Forecast
- Flood Maps
- Atmospheric Rivers
- King Tides Calendar
- Seasonal Precipitation and Temperature Forecasts



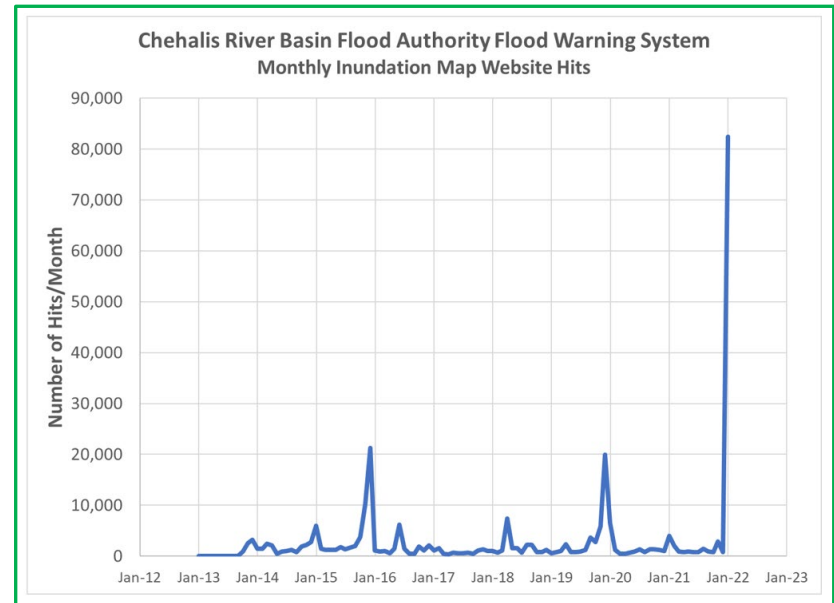
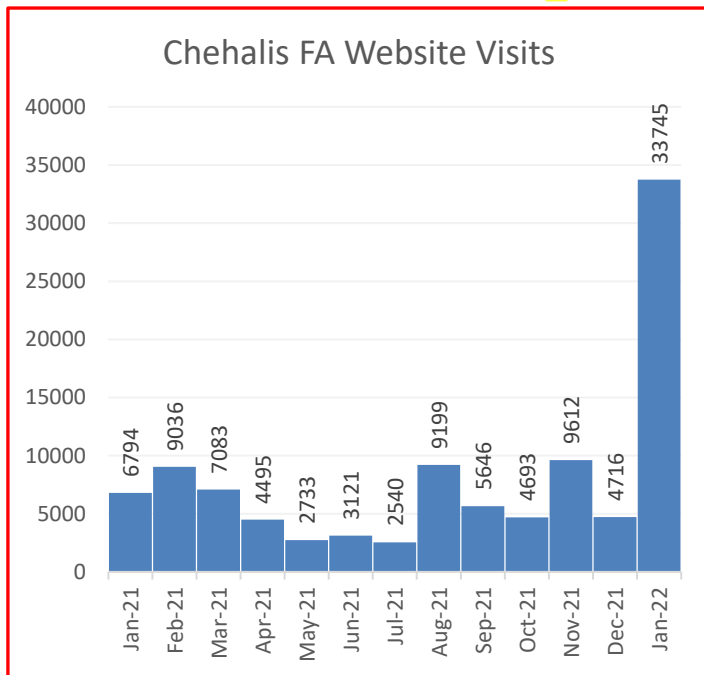
Flood Warning System (2022 Flood Event)

Flood Warning System Works!

The Flood Authority's flood warning system website was incredibly active during the January flood. Nearly 25,000 individual user logins were recorded and the flood inundation maps received almost 75,000 hits, providing vital information to the community during the flood emergency. *Dave Curtis, West Consultants, 2/01/2022*

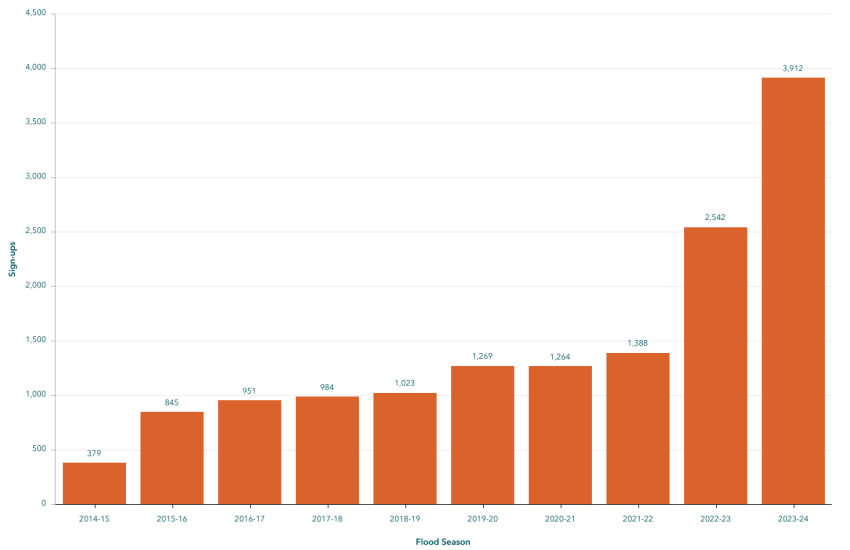
Unknown contact said:

"Our house flooded in '96 and '07--we like to be prepared The gauges and alerts give us more peace of mind. Info=peace of mind" *Survey Respondent, 2/01/2022*

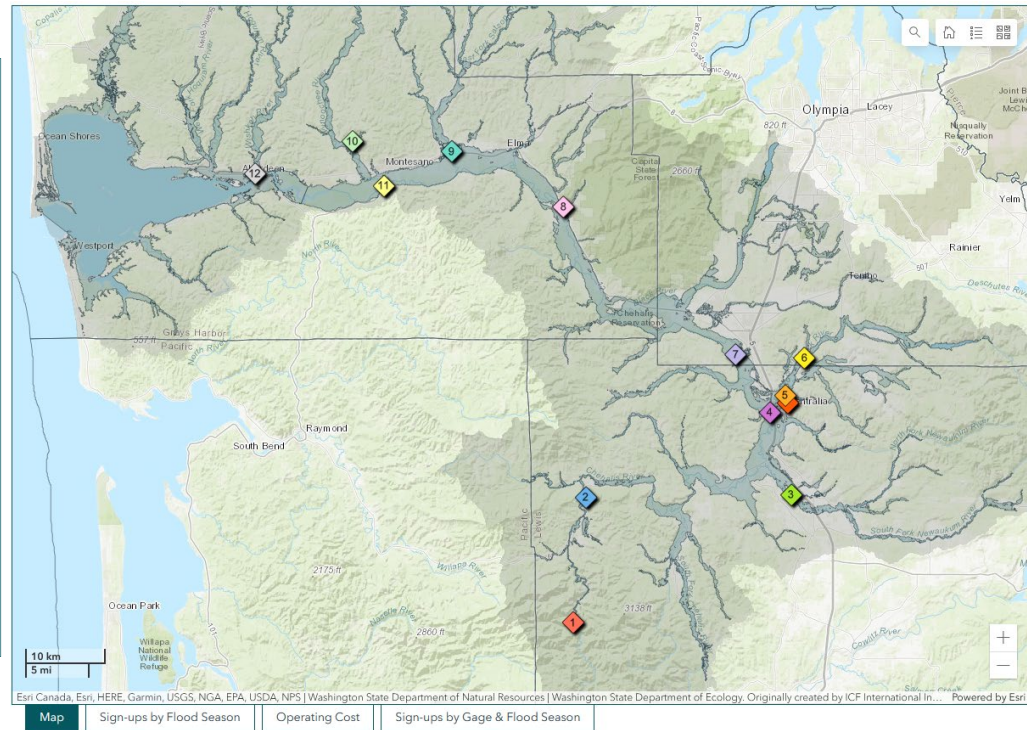


Flood Warning System (Alert Sign-Ups)

Data Fact - Total sign-ups continue to increase year-over-year.



Map Sign-ups by Flood Season Operating Cost Sign-ups by Gage & Flood Season



Chehalis Basin Strategy



Office of Chehalis
Basin

Chehalis Basin
Board

<https://chehalisbasinstrategy.com/>

appoints 3
member



Chehalis Basin Board

Community leaders, Chehalis and
Quinault tribal representatives,
local and state government liaisons

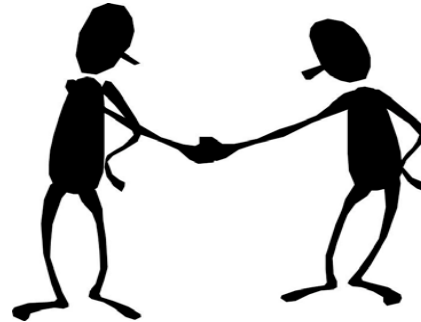
Office of Chehalis Basin

Small team within the WA
Department of Ecology

“Network of Partners”

Organizations and local
entities who turn ideas into
shovel-ready reality

Chehalis Basin Strategy (Network of Partners)



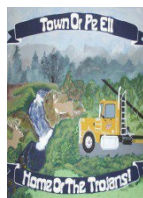
WASHINGTON STATE
CONSERVATION
COMMISSION



Chehalis Lead Entity



CHEHALIS RIVER BASIN
FLOOD CONTROL ZONE DISTRICT



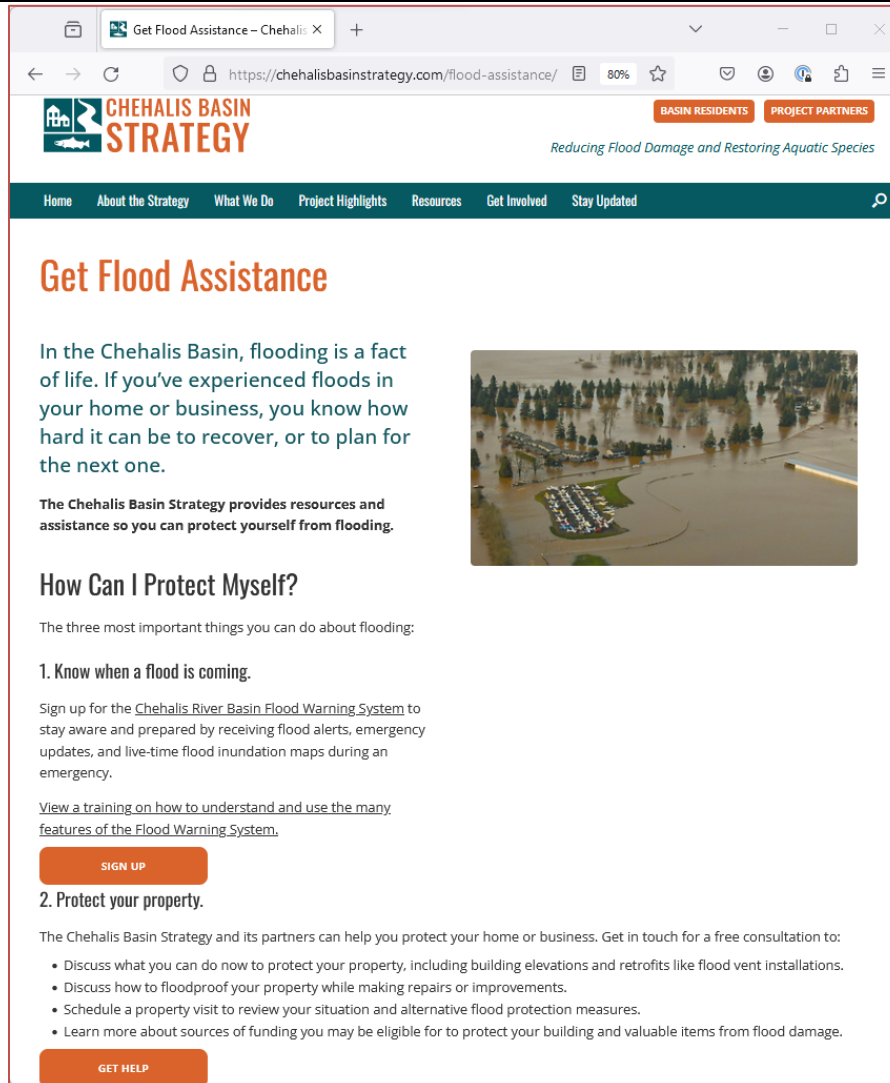
WASHINGTON STATE DEPARTMENT OF
Natural Resources

TOWN of BUCODA



Office of Financial Management
Better information. Better decisions. Better government.

Chehalis Basin Strategy (Helping Individuals)



The screenshot shows a web browser window displaying the 'Get Flood Assistance' page of the Chehalis Basin Strategy website. The browser's address bar shows the URL 'https://chehalisbasinstrategy.com/flood-assistance/'. The website header includes the 'CHEHALIS BASIN STRATEGY' logo, navigation links for 'Home', 'About the Strategy', 'What We Do', 'Project Highlights', 'Resources', 'Get Involved', and 'Stay Updated', and two buttons: 'BASIN RESIDENTS' and 'PROJECT PARTNERS'. The main heading is 'Get Flood Assistance'. The text explains that flooding is a fact of life in the Chehalis Basin and provides resources for protection. An aerial photograph shows a flooded residential area with a parking lot. The page lists three key actions: 1. Know when a flood is coming, with a 'SIGN UP' button; 2. Protect your property, with a 'GET HELP' button.

Get Flood Assistance – Chehalis: X

https://chehalisbasinstrategy.com/flood-assistance/ 80%


CHEHALIS BASIN STRATEGY BASIN RESIDENTS PROJECT PARTNERS
Reducing Flood Damage and Restoring Aquatic Species

Home About the Strategy What We Do Project Highlights Resources Get Involved Stay Updated

Get Flood Assistance

In the Chehalis Basin, flooding is a fact of life. If you've experienced floods in your home or business, you know how hard it can be to recover, or to plan for the next one.

The Chehalis Basin Strategy provides resources and assistance so you can protect yourself from flooding.



How Can I Protect Myself?

The three most important things you can do about flooding:

- 1. Know when a flood is coming.**

Sign up for the [Chehalis River Basin Flood Warning System](#) to stay aware and prepared by receiving flood alerts, emergency updates, and live-time flood inundation maps during an emergency.

[View a training on how to understand and use the many features of the Flood Warning System.](#)

SIGN UP
- 2. Protect your property.**

The Chehalis Basin Strategy and its partners can help you protect your home or business. Get in touch for a free consultation to:

 - Discuss what you can do now to protect your property, including building elevations and retrofits like flood vent installations.
 - Discuss how to floodproof your property while making repairs or improvements.
 - Schedule a property visit to review your situation and alternative flood protection measures.
 - Learn more about sources of funding you may be eligible for to protect your building and valuable items from flood damage.

GET HELP

Today vs 2007

Today, we are substantially more aware, better prepared for catastrophic flooding than ever before.

- ✓ We have a state-of-the art flood warning system.
- ✓ We've completed many cost-efficient local projects and habitat projects.
- ✓ We're serving people, local governments, emergency responders, agriculture, fish and habitat.
- ✓ We have a governance, administrative, and funding structure that's delivering results.



<https://chehalisbasinstrategy.com/office-of-chehalis-basin/>

Key Contacts

Vickie Raines, Grays Harbor County Representative

Chair, Chehalis River Basin Flood Authority

Chair, Chehalis Basin Board

360/249-3731

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Scott Boettcher

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scottb@sbgh-partners.com



Thank You!

This Presentation:

Available at “Chehalis River Basin Flood Authority” Website at
https://www.ezview.wa.gov/site/alias_1492/34490/outreach_education.aspx

Email Distribution Lists:

Megan Sathre (Flood Authority)
megan.sathre@lewiscountywa.gov

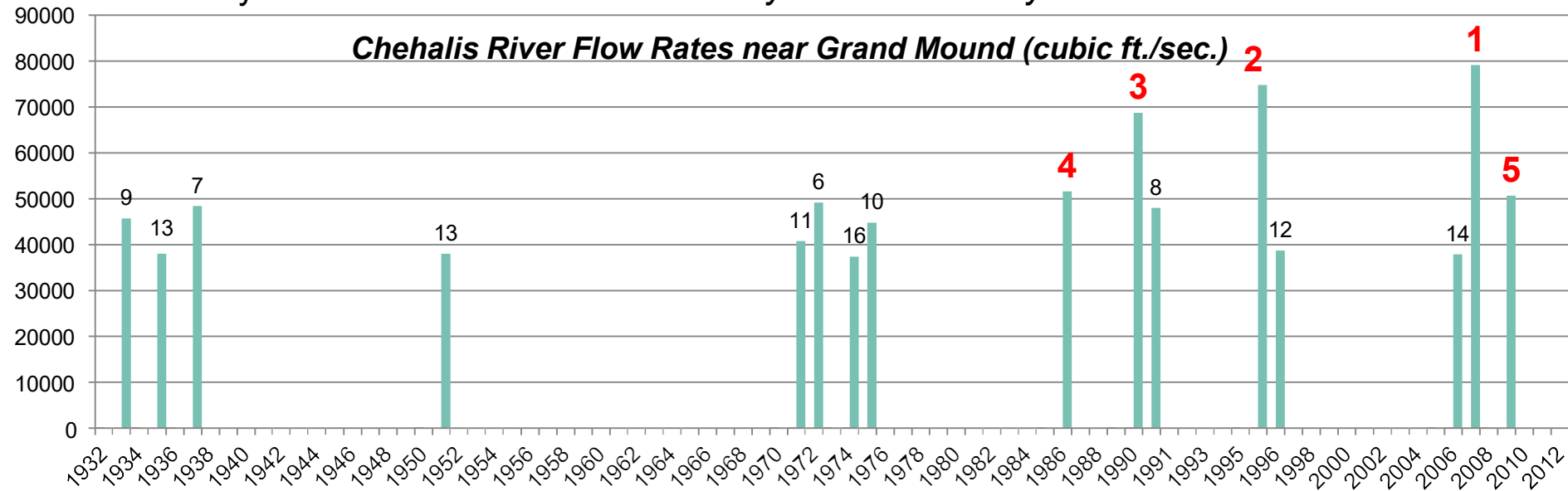
Cindy Bradley (Office of Chehalis Basin)
Cindy.Bradley@ecy.wa.gov

Also -- Background

■ Ranked high flow events (1932 - 2012) . . .

- I-5 closed 1990, 1996, 2007, 2009.
- Five largest events since 1986 -- *Frequent floods are getting worse and damage is increasing . . .*
- 100 year flood estimate -- *Increased by 33% in last 30 years.*

Chehalis River Flow Rates near Grand Mound (cubic ft./sec.)



Also -- Background

- 2007 Storm -- \$938M Basin-wide damage, \$300M lost economic activity (WA).



Exit 77 (I-5) in Chehalis
STEVE RINGMAN / SEATTLE TIMES



City of Centralia
STEVE RINGMAN / SEATTLE TIMES



↑
← Photos Source: LEWIS COUNTY,
DIVISION OF EMERGENCY
MANAGEMENT

Extra 2 of 3



State Route 6,
West of Adna
MIKE
SALSBURY /
AP

